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NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			BALAOING, ARIEL A	
			ART UNIT	PAPER NUMBER
			2683	

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/715,842

Applicant(s)

WILLARS ET AL.

Examiner

Ariel Balaoing

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 29 and 30 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-4, 7-10, 12-16, 18-21, 24-27, 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over STUMPERT et al (US 2004/0157600 A1) in view of CORBETT et al (US 6,351,642 B1).

Regarding claim 1, STUMPERT discloses a method for use in a controller in a radio network including a number of cells (abstract; paragraph 10, 17, 39), in which network a user equipment communicates with at least one cell defining an active set (abstract; paragraph 10, 17, 39, 62-67; Figure 3), comprising: receiving related information (paragraph 39, 43); filtering a neighbor cell list associated with active set using related information to create a filtered neighbor cell list (paragraph 10, 62-67); and transmitting the filtered neighbor cell list to the user equipment thereby enabling measurement of pilot signal strength for cells in the filtered neighbor cell list (paragraph 62-67). However STUMPERT does not disclose wherein the user equipment (UE) having a velocity vector including position, speed, and direction; wherein the received information is related to the velocity vector; and wherein the velocity vector is used to filter a neighbor cell list. CORBETT discloses wherein the user equipment (UE) having a velocity vector including position, speed, and direction (column 2:lines 52-65; column 4:line 56-column 5:line 25); wherein the received information is related to the velocity vector (column 2:lines 52-65; column 4:line 56-column 5:line 25; column 6:lines 9-65);

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and wherein the velocity vector is used to filter a neighbor cell list (column 2:lines 52-65; column 4:line 56-column 5:line 25; column 6:lines 9-65). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify STUMPERT to include a method to calculate a velocity vector used to filter a neighbor cell list, as taught by CORBETT, as this would improve selection of cells in a given direction of the mobile device.

Regarding claim 2, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. STUMPERT discloses wherein making the filtering depends on a position (paragraph 10, 21, 62-67) of the user equipment. However STUMPERT does not disclose wherein the filtering includes removing cells that are further away than a distance threshold, are outside a certain area, or have a pilot tone strength under a level threshold. CORBETT discloses wherein the filtering includes removing cells that are further away than a distance threshold, are outside a certain area, or have a pilot tone strength under a level threshold (column 1:line 66-column 2:line 29; column 2:lines 52-65; column 4:line 56-column 5:line 25; column 6:lines 9-65; column 7:lines 23-34; column 8:lines 38-55). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify STUMPERT to include a method to filter a neighbor cell list based on distance threshold or pilot strength, as taught by CORBETT, as this would improve selection of cells in a given direction of the mobile device.

Regarding claim 3, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. However, STUMMPERT does not disclose

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wherein the filtering depends on the direction of the user equipment, the method further comprising: filtering out one or more cells not in said direction. CORBETT discloses wherein the filtering depends on the direction of the user equipment (Figure 8; column 5:lines 13-53; column 6:lines 9-46), the method further comprising: filtering out one or more cells not in said direction (Figure 8; column 5:lines 13-53; column 6:lines 9-46). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify STUMPERT to include a method to calculate a velocity vector used to filter a neighbor cell list, as taught by CORBETT, as this would improve selection of cells in a given direction of the mobile device.

Regarding claim 4, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. STUMPERT further discloses further comprising: selecting cells that are to be filtered out from the neighbor cell list (paragraph 62-67). However, STUMPERT does not disclose wherein the filtering is dependant on the speed of the user equipment, wherein fewer cells are filtered out from the neighbor cell list when the speed is higher than when the speed is lower. CORBETT discloses wherein the filtering is dependent on the speed of the user equipment, wherein fewer cells are filtered out from the neighbor cell list when the speed is higher than when the speed is lower (column 4:line 56-column 5:line 53; bias values are given to a weighted probability that the UE will arrive at the cell dependant on the velocity vector. As the speed increases, probability of cell arrival also increases). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify STUMPERT to filter out fewer cells when a higher rate of speed is measured,

as taught by CORBETT, as this allows the further measurement of signal quality to cell candidates normally not considered at a slower speed.

Regarding claim 7, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. STUMPERT further discloses wherein when the network includes cells using different radio access technologies, the filtering depends on which radio access technology is used in the different cells (Figure 2; paragraph 10, 32, 33, 62-67).

Regarding claim 8, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. STUMPERT further discloses wherein when the network is close to another network, the filtering depends on to which network different cells are connected (paragraph 10, 32, 33, 62-67).

Regarding claim 9, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. However, STUMPERT does not disclose further comprising: using GPS technology, a round trip time, or an observed time difference of arrival to estimate a position of the user equipment. CORBETT discloses further comprising: using GPS technology, a round trip time, or an observed time difference of arrival to estimate a position of the user equipment (column 4:lines 28-55). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify STUMPERT to include a means for acquiring location of the mobile device, as taught by CORBERTT, as knowing the approximate position of the mobile device allows the system to measure signal quality of base stations within radio communicative range of the mobile device.

Regarding claim 10, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. However, STUMPERT does not disclose further comprising: using change in position to estimate a direction or a speed of the user equipment. CORBERTT discloses further comprising: using change in position to estimate a direction or a speed of the user equipment (column 4:line 56-column 5:line 12; speed or velocity is a change of position with respect to time). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify STUMPERT to include a means for acquiring location of the mobile device, as taught by CORBERTT, as knowing the velocity of the mobile device allows the system to anticipate which base stations will be within radio communicative range of the mobile device.

Regarding claim 12, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. STUMPERT further discloses wherein when the controller is a serving controller, the method further comprises: receiving the neighbor cell list from a drift controller including extra cell information, and wherein the filtering also depends on the extra cell information (paragraphs 62-67).

Regarding claim 13, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. STUMPERT further discloses wherein when the controller is a drift controller, the method further comprises: receiving a related information from a serving controller, and wherein the filtering depends on the related information and on extra cell information (paragraphs 62-67). However STUMPERT does not disclose wherein the related information is a velocity vector. CORBERTT



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discloses wherein the related information is a velocity vector (column 2:lines 52-65; column 4:line 56-column 5:line 25; column 6:lines 9-65). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify STUMPERT to include a method to calculate a velocity vector used to filter a neighbor cell list, as taught by CORBETT, as this would improve selection of cells in a given direction of the mobile device.

Regarding claim 14, STUMPERT discloses a method for use in a user equipment communicating with at least one cell defining an active set in a radio network (abstract; paragraph 10, 17, 39, 62-67), comprising: transmitting related information (paragraph 39, 43, 62-67); receiving a filtered neighbor cell list generated using the related information and a neighbor cell list associated with the active set (paragraph 10, 62-67); and measuring pilot signal strength for the cells in the filtered neighbor cell list (paragraph 10, 60-67; connection quality is measured from the mobile device). However STUMPERT does not disclose wherein the user equipment (UE) having a velocity vector including position, speed, and direction; wherein the received information is related to the velocity vector; and wherein the velocity vector is used to filter a neighbor cell list. CORBETT discloses wherein the user equipment having a velocity vector including position, speed, and direction (column 2:lines 52-65; column 4:line 56-column 5:line 25); wherein the transmitted information is related to the velocity vector (column 2:lines 52-65; column 4:line 56-column 5:line 25; column 6:lines 9-65); and wherein the velocity vector is used to filter a neighbor cell list (column 2:lines 52-65; column 4:line 56-column 5:line 25; column 6:lines 9-65). Therefore it would have been

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obvious to a person of ordinary skill in the art at the time the invention was made to modify STUMPERT to include a method to calculate a velocity vector used to filter a neighbor cell list, as taught by CORBETT, as this would improve selection of cells in a given direction of the mobile device.

Regarding claim 15, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. However, STUMPERT does not disclose further comprising: using GPS technology, a round trip time, or an observed time difference of arrival to estimate a position of the user equipment. CORBETT discloses further comprising: using GPS technology, a round trip time, or an observed time difference of arrival to estimate a position of the user equipment (column 4:lines 28-55). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify STUMPERT to include a means for acquiring location of the mobile device, as taught by CORBERTT, as knowing the approximate position of the mobile device allows the system to measure signal quality of base stations within radio communicative range of the mobile device.

Regarding claim 16, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. However, STUMPERT does not disclose further comprising: using change in position to estimate a direction or a speed of the user equipment. CORBERTT discloses further comprising: using change in position to estimate a direction or a speed of the user equipment (column 4:line 56-column 5:line 12; speed or velocity is a change of position with respect to time). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was

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made to modify STUMPERT to include a means for acquiring location of the mobile device, as taught by CORBERTT, as knowing the velocity of the mobile device allows the system to anticipate which base stations will be within radio communicative range of the mobile device.

Regarding claim 18, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. STUMPERT discloses a controller for use in a radio network including a number of cells in which network a user equipment communicates with at least one cell defining an active set (abstract; paragraph 10, 17, 39, 62-67; Figure 3), wherein the controller is configured as follows: to receive information (paragraph 39, 43); to filter a neighbor cell list associated with the active set depending on the information to create a filtered neighbor cell list (paragraph 10, 62-67); and to transmit the filtered neighbor cell list to the user equipment thereby enabling measurement by the user equipment of pilot signal strength for cells in the filtered neighbor cell list (paragraph 10, 62-67). However, STUMPERT does not disclose wherein the user equipment has a velocity vector including position, speed, and direction; wherein controller receives information related to the velocity vector; and wherein a neighbor cell list is filtered dependant on the velocity vector. CORBETT discloses wherein the user equipment has a velocity vector including position, speed, and direction (column 2:lines 52-65; column 4:line 56-column 5:line 25); wherein controller receives information related to the velocity vector (column 2:lines 52-65; column 4:line 56-column 5:line 25; column 6:lines 9-65); and wherein a neighbor cell list is filtered dependant on the velocity vector (column 2:lines 52-65; column 4:line 56-

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column 5:line 25; column 6:lines 9-65). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify STUMPERT to include a method to calculate a velocity vector used to filter a neighbor cell list, as taught by CORBETT, as this would improve selection of cells in a given direction of the mobile device.

Regarding claim 19, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. However, STUMPERT does not disclose wherein depending on the position of the user equipment, the controller is arranged to filter out from the neighbor cell list one or more cells that are further away from the user equipment than a distance threshold, that are outside a certain area, or that have a pilot strength under a level threshold. CORBERTT discloses wherein depending on the position of the user equipment, the controller is arranged to filter out from the neighbor cell list one or more cells that are further away from the user equipment than a distance threshold, that are outside a certain area, or that have a pilot strength under a level threshold (column 1:line 66-column 2:line 29; column 2:lines 52-65; column 4:line 56-column 5:line 25; column 6:lines 9-65; column 7:lines 23-34; column 8:lines 38-55). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify STUMPERT to include a method to filter a neighbor cell list based on distance threshold or pilot strength, as taught by CORBETT, as this would improve selection of cells in a given direction of the mobile device.

Regarding claim 20, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. However, STUMPERT does not disclose wherein

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depending on the direction of the user equipment, the controller is arranged to filter out from the neighbor cell list one or more of the cells that are not in said direction.

CORBETT discloses wherein depending on the direction of the user equipment, the controller is arranged to filter out from the neighbor cell list one or more of the cells that are not in said direction (Figure 8; column 5:lines 13-53; column 6:lines 9-46).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify STUMPERT to include a method to calculate a velocity vector used to filter a neighbor cell list, as taught by CORBETT, as this would improve selection of cells in a given direction of the mobile device.

Regarding claim 21, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. STUMPERT further discloses wherein the controller is arranged to select a number of cells to be filtered out from the neighbor cell list (paragraph 62-67). However, STUMPERT does not disclose wherein the filtering is dependent on the speed of the user equipment so that fewer cells are filtered out from the neighbor cell list when the speed is higher than when the speed is lower.

CORBETT discloses wherein the filtering is dependent on the speed of the user equipment so that fewer cells are filtered out (column 4:line 56-column 5:line 53; bias values are given to a weighted probability that the UE will arrive at the cell dependant on the velocity vector. As the speed increases, probability of cell arrival also increases). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify STUMPERT to filter out fewer cells when a higher rate of speed is measured, as taught by CORBETT, as this allows the further

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measurement of signal quality to cell candidates normally not considered at a slower speed.

Regarding claim 24, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. STUMPERT further discloses wherein when the network includes cells using different radio access technologies, the controller is arranged to filter the neighbor cell list depending on which radio access technology is used in the different cells (Figure 2; paragraph 10, 32, 33, 62-67).

Regarding claim 25, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. STUMPERT further discloses wherein when the network is close to another network, the controller is arranged to filter the neighbor cell list depending on which network different cells are connected (Figure 2; paragraph 10, 32, 33, 62-67).

Regarding claim 26, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. However, STUMPERT does not disclose wherein the controller is arranged to use GPS technology, round trip time, or observed time difference of arrival to estimate a position of the user equipment. CORBETT discloses wherein the controller is arranged to use GPS technology, round trip time, or observed time difference of arrival to estimate a position of the user equipment (column 4:lines 28-55). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify STUMPERT to include a means for acquiring location of the mobile device, as taught by CORBERTT, as knowing the approximate

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position of the mobile device allows the system to measure signal quality of base stations within radio communicative range of the mobile device.

Regarding claim 27, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. However, STUMPERT does not disclose wherein the controller is arranged to use change in position to estimate a direction or a speed of the user equipment. CORBERTT discloses wherein the controller is arranged to use change in position to estimate a direction or a speed of the user equipment (column 4:lines 28-55). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify STUMPERT to include a means for acquiring location of the mobile device, as taught by CORBERTT, as knowing the approximate position of the mobile device allows the system to measure signal quality of base stations within radio communicative range of the mobile device.

Regarding claim 29, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. STUMPERT further discloses a serving controller is arranged to receive the neighbor cell list from a drift controller and extra cell information, and to filter the neighbor cell list depending on the extra cell information (paragraph 62-67).

Regarding claim 30, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. STUMPERT further discloses a drift controller is arranged to receive related information from a serving controller, and to filter the neighbor cell list depending on the related information and on extra cell information paragraph 62-67). However STUMPERT does not disclose wherein the related

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information is a velocity vector. CORBERTT discloses wherein the related information is a velocity vector (column 2:lines 52-65; column 4:line 56-column 5:line 25; column 6:lines 9-65). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify STUMPERT to include a method to calculate a velocity vector used to filter a neighbor cell list, as taught by CORBETT, as this would improve selection of cells in a given direction of the mobile device.

Regarding claim 31, STUMPERT discloses a user equipment for in use communicating with at least one cell defining an active set in a radio network (abstract; paragraph 10, 17, 39, 62-67; Figure), wherein the user equipment is arranged to perform the following: receive a filtered neighbor cell list created by filtering a neighbor cell list associated with the active set depending on related information (paragraph 10, 62-67); and measure a pilot signal strength for one or more cells in the filtered neighbor cell list (paragraph 10, 62-67). However, STUMPERT does not disclose wherein a user equipment has a velocity vector including position, speed, and direction; wherein the user equipment transmits information related to the velocity vector; and wherein a neighbor cell list is filtered dependant on the velocity vector. CORBETT discloses wherein a user equipment has a velocity vector including position, speed, and direction (column 2:lines 52-65; column 4:line 56-column 5:line 25); wherein the user equipment transmits information related to the velocity vector (column 2:lines 52-65; column 4:line 56-column 5:line 25; column 6:lines 9-65); and wherein a neighbor cell list is filtered dependant on the velocity vector (column 2:lines 52-65; column 4:line 56-column 5:line 25; column 6:lines 9-65). Therefore it would have been obvious to a person of ordinary



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skill in the art at the time the invention was made to modify STUMPERT to include a method to calculate a velocity vector used to filter a neighbor cell list, as taught by CORBETT, as this would improve selection of cells in a given direction of the mobile device.

Regarding claim 32, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. However, STUMPERT does not disclose wherein the user equipment is arranged to use GPS technology, a round trip time, or an observed time difference of arrival to estimate a position of the user equipment. CORBETT discloses wherein the user equipment is arranged to use GPS technology, a round trip time, or an observed time difference of arrival to estimate a position of the user equipment (column 4:lines 28-55). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify STUMPERT to include a means for acquiring location of the mobile device, as taught by CORBERTT, as knowing the approximate position of the mobile device allows the system to measure signal quality of base stations within radio communicative range of the mobile device.

Regarding claim 33, see the rejections of the parent claim concerning the subject matter this claim is dependant upon. However, STUMPERT does not disclose wherein the user equipment is arranged to use a change in position to estimate a direction or a speed of the user equipment. CORBERTT discloses wherein the user equipment is arranged to use a change in position to estimate a direction or a speed of the user equipment (column 4:line 56-column 5:line 12; speed or velocity is a change of position

with respect to time). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify STUMPERT to include a means for acquiring location of the mobile device, as taught by CORBERTT, as knowing the velocity of the mobile device allows the system to anticipate which base stations will be within radio communicative range of the mobile device.

6. Claims 5 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over STUMPERT et al (US 2004/0157600 A1) in view of CORBETT et al (US 6,351,642 B1) as applied to claims 2 and 19 above, and further in view of KANAI (US 5,239,667).

Regarding claim 5, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. However, the combination of STUMPERT and CORBETT does not disclose wherein when a distance threshold or a level threshold is used, the method further comprises: changing the distance threshold or the level threshold depending on the speed of the user equipment. KANAI discloses wherein when a distance threshold or a level threshold is used, the method further comprises: changing the distance threshold or the level threshold depending on the speed of the user equipment (abstract; column 2:lines 6-46). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of STUMPERT and CORBETT to include a level threshold value dependent on the speed of the mobile device, as taught by KANAI, as this improves handoff of the communication system at high speeds.

Regarding claim 22, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. However, the combination of STUMPERT and

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CORBETT does not disclose wherein the controller is arranged to change the distance threshold or the level threshold depending on the speed of the user equipment. KANAI discloses wherein the controller is arranged to change the distance threshold or the level threshold depending on the speed of the user equipment (abstract; column 2:lines 6-46). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of STUMPERT and CORBETT to include a level threshold value dependent on the speed of the mobile device, as taught by KANAI, as this improves handoff of the communication system at high speeds.

7. Claims 6 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over STUMPERT et al (US 2004/0157600 A1) in view of CORBETT et al (US 6,351,642 B1) as applied to claims 1 and 18 above, and further in view of BENVENISTE (US 5,345,499).

Regarding claim 6, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. STUMPERT further discloses filtering a neighbor cell list (paragraph 62-67). However, the combination of STUMPERT and CORBETT does not disclose wherein when the network includes at different hierarchical level cells, the filtering depends on the speed of the user equipment, the method further comprising: filtering out one or more larger cells when the speed is under a speed threshold, and filtering out one or more smaller cells when the speed is over the speed threshold. BENVENISTE discloses wherein when the network includes at different hierarchical level cells (abstract), the filtering depends on the speed of the user

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equipment (abstract), the method further comprising: filtering out one or more larger cells when the speed is under a speed threshold (abstract; column 3:line 56-column 4:line 16; column 4:line 27-column 5:line 4), and filtering out one or more smaller cells when the speed is over the speed threshold (abstract; column 3:line 56-column 4:line 16; column 4:line 27-column 5:line 4). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of STUMPERT in view of CORBETT to filter handover selection between macro cells and micro cells, as taught by BENVENISTE, as this would allow the limited range of micro cells to handle cell communication of slow moving mobile device and thus providing greater bandwidth to the overall system.

Regarding claim 23, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. STUMPERT further discloses filtering a neighbor cell list (paragraph 62-67). However, the combination of STUMPERT and CORBETT does not disclose wherein when the network includes cells on different hierarchical levels, the controller is arranged to filter out one or more larger cells when the user equipment speed is under a speed threshold, and to filter out one or more of smaller cells when the user equipment speed is over the speed threshold. BENVENISTE discloses wherein when the network includes cells on different hierarchical levels (abstract), the controller is arranged to filter out one or more larger cells when the user equipment speed is under a speed threshold (abstract; column 3:line 56-column 4:line 16; column 4:line 27-column 5:line 4), and to filter out one or more of smaller cells when the user equipment speed is over the speed threshold (abstract; column 3:line 56-

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column 4:line 16; column 4:line 27-column 5:line 4). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of STUMPERT in view of CORBETT to filter handover selection between macro cells and micro cells, as taught by BENVENISTE, as this would allow the limited range of micro cells to handle cell communication of slow moving mobile device and thus providing greater bandwidth to the overall system.

8. Claims 11, 17, 28 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over STUMPERT et al (US 2004/0157600 A1) in view of CORBETT et al (US 6,351,642 B1) and further in view of DA ROCHA et al (US 2002/0042279 A1).

Regarding claims 11 and 17, see the rejections of the parent claims concerning the subject matter these claims are dependent upon. However, the combination of STUMPERT and CORBETT does not disclose further comprising: using a Doppler effect in frequency to estimate a speed of the user equipment. DA ROCHA discloses further comprising: using a Doppler effect in frequency to estimate a speed of the user equipment (paragraph 62-71). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of STUMPERT and CORBETT to include speed measurements of the UE using a Doppler effect in frequency, as taught by DA ROCHA, as this is a well know method of calculating the speed of a mobile device.

Regarding claim 28, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. However, the combination of STUMPERT and CORBETT does not disclose wherein the controller is arranged to use a Doppler effect

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in frequency to estimate a speed of the user equipment. DA ROCHA discloses wherein the controller is arranged to use a Doppler effect in frequency to estimate a speed of the user equipment (paragraph 62-71). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of STUMPERT and CORBETT to include speed measurements of the UE using a Doppler effect in frequency, as taught by DA ROCHA, as this is a well know method of calculating the speed of a mobile device.

Regarding claim 34, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. However, the combination of STUMPERT and CORBETT does not disclose wherein the user equipment is arranged to use a Doppler effect in frequency to estimate a speed of the user equipment. DA ROCHA discloses wherein the user equipment is arranged to use a Doppler effect in frequency to estimate a speed of the user equipment (paragraph 62-71). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of STUMPERT and CORBETT to include speed measurements of the UE using a Doppler effect in frequency, as taught by DA ROCHA, as this is a well know method of calculating the speed of a mobile device.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

WALLSTEDT et al (US 5,854,981) – Adaptive neighbor cell list

CHHEDA et al (US 5,946,621) – Optimizing neighbor set during soft handover

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BONTA (US 6,014,565) – Service planning in a radio telephone system

MENICH et al (US 5,327,575) – Directional handover control employing maho


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ariel Balaoing whose telephone number is (571) 272-7317. The examiner can normally be reached on Monday-Friday from 8:00 AM to 4:30 AM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on (571) 272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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9/6/05